

NASA TECH BRIEF

Langley Research Center



NASA Tech Briefs announce new technology derived from the U.S. space program. They are issued to encourage commercial application. Tech Briefs are available on a subscription basis from the National Technical Information Service, Springfield, Virginia 22151. Requests for individual copies or questions relating to the Tech Brief program may be directed to the Technology Utilization Office, NASA, Code KT, Washington, D.C. 20546.

Executive Computer Program for Linking Independent Computer Programs: ODINEX

The problem:

It was necessary to provide a user-oriented, computer-aided design-synthesis tool capable of utilizing independent, often existing, technology programs without modification as its analytical base.

The solution:

ODINEX is a new computer program for linking independent computer programs into an interdependent system of programs.

How it's done:

ODINEX controls the sequence of execution of a network of program elements and maintains a data base of common information which forms the communication link among the programs. Any program element may access or modify the data base through the ODINEX executive computer program.

The ODINEX program is structured to provide the following:

- a. A dynamically-constructed data base containing all interprogram data. The data base can be permanently stored at user-selected points throughout the simulation.
- b. A language for controlling the execution sequence of an arbitrary network of independent programs by simple commands. The flow path may be based on information from the data base.
- c. A control-card data base for storing information with regard to the retrieval and execution of individual programs. These data-base files can be updated either by a separate run or dynamically in the simulation.
- d. A language for automatically retrieving data-base information as input to any program in the network. An advanced-information access-and-retrieval system was developed and included as an

integral part of ODINEX. The language requires no modification to the independent program.

- e. A simple technique for allowing any program in the network to update the data base. The technique does not influence the normal stand-alone operation of the program.
- f. A capability for generating one or more reports describing the status of the design. This information can be printed as a part of the normal computer output.
- g. Operational flexibility of batch or interactive modes of operation.

ODINEX has general applicability throughout industry wherever multiple-program tasks are involved. Any process involving more than one program for which the independent program elements are available can be synthesized.

Notes:

1. This program was written in FORTRAN IV and COMPASS for the CDC 6000-series computer.
2. Inquiries concerning this program should be directed to:

COSMIC
112 Barrow Hall
University of Georgia
Athens, Georgia 30601
Reference: LAR-11324

Source: C. R. Glatt, D. S. Hague,
and D. A. Watson of
Aerophysics Research Corp.
under contract to
Langley Research Center
(LAR-11324)

Category: 09 (Mathematics and
Information Sciences)